

**PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:	)	Confirmation No. 8661
	)	
Tomoharu Tanaka et al.	)	Group Art No. 2824
	)	
Serial No.: 10/656,139	)	Examiner: LE, Vu Anh
	)	
Filed: September 8, 2003	)	Docket No: 001701.00676
	)	
For: Non-Volatile Semiconductor Memory Device	)	
Adapted To Store A Multi-Valued Data In A	)	
Single Memory Cell	)	

**INFORMATION DISCLOSURE STATEMENT**

**Mail Stop 313(c)**  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Attention: Karen Creasey  
 Via Facsimile  
 571-273-0025

Sir:

Pursuant to 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §1.97, Applicants submit herewith Form PTO/SB/08, identifying information for consideration by the Examiner. A copy of the item of information is enclosed.

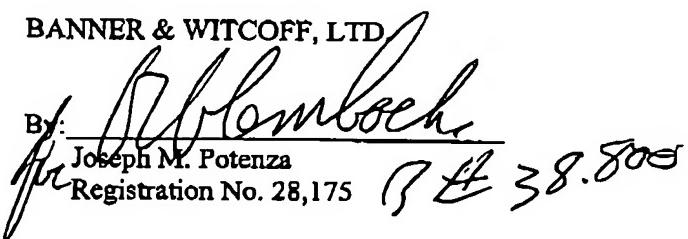
The undersigned certifies under 37 C.F.R. § 1.704(d) that each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counter part application and that this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this statement.

Applicants do not waive any rights to take appropriate action to establish patentability over the listed document should it be applied as a reference against the claims of the present application.

Consideration of the cited information and making the same of record in the prosecution of the above-noted application are respectfully requested. Should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

BANNER & WITCOFF, LTD

By:   
 Joseph M. Potenza  
 Registration No. 28,175 *74 38.800*

Dated: February 10, 2005

1001 G Street, N.W.  
 Washington, D.C. 20001-4597  
 (202) 824-3000

PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

**Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number.**

**Substitute for Form 1449A/PTO**

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*(Use as many sheets as necessary)*

Sheet 1 of 1

<i><b>Complete If Known</b></i>	
<i><b>Application Number</b></i>	0/656,139
<i><b>Filing Date</b></i>	September 8, 2003
<i><b>First Named Inventor</b></i>	Tomoharu Tanaka et al.
<i><b>Art Unit</b></i>	2824
<i><b>Examiner Name</b></i>	LE, Vu Ang
<i><b>Attorney Docket Number</b></i>	001701.00676

## **U.S. PATENT DOCUMENTS**

## **FOREIGN PATENT DOCUMENTS**

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 801.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

TMs collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**Abstract (Basic): JP 9326199 A**

The memory has a memory cell array (100) in which multiple non-volatile memory cells are configured. A bit-line is connected with the current flow path of the memory cell array and the word line is connected with the control gate of the cell array. Multiple sense latch circuits (110,120) and a bypass circuit (170) for the potential holder are connected with the bit-line of the memory cell array. Based on the predetermined data stored in the latch circuit, the data written-in the memory cell is checked for normal data write-in operation. When the threshold value of the data in the memory cell is less than the predetermined value, the potential of the bit-line from the bypass circuit is increased to high level by a voltage switching circuit (160). When the threshold value of the data is more than the predetermined value, then the potential value to the bit-line is released. ADVANTAGE - Enables data write-in operation control by threshold value adjustment. Shortens data write-in time in memory cell.

Dwg.2/21

Title Terms: ELECTRIC; ERASE; NON; VOLATILE; SEMICONDUCTOR; MEMORY; EEPROM; PORTABLE; TELEPHONE; PAGE; VOLTAGE; SWITCH; CIRCUIT; CONTROL; POTENTIAL; LEVEL; SUPPLY; BIT; LINE; CIRCUIT; BASED; THRESHOLD; VOLTAGE; LEVEL; DATA; WRITING; MEMORY; CELL

Derwent Class: U13; U14

International Patent Class (Main): G11C-016/02; G11C-016/06

File Segment: EPI

Manual Codes (EPI/S-X): U13-C04B2; U14-A03B7; U14-A07B

\*\*\*\*\*  
\*\*\* RX REPORT \*\*\*  
\*\*\*\*\*

RECEPTION OK

TX/RX NO	7997
RECIPIENT ADDRESS	202 824 3001
DESTINATION ID	
ST. TIME	02/10 17:42
TIME USE	06'31
PGS.	32
RESULT	OK